5-2014

# Therapists' Perspective on the Use of Somatic Interventions in Childhood Trauma

Coral Popowitz
*St. Catherine University*

# Therapists' Perspective on the Use of Somatic Interventions in Childhood Trauma

by

Coral Popowitz, MA

MSW Clinical Research Paper

Presented to the Faculty of
School of Social Work
St. Catherine University and the University of St. Thomas
St. Paul, Minnesota
In Partial fulfillment of the Requirement for the Degree of

Master of Social Work

Committee Members
Dr. Colin Hollidge, Ph.D., (Chair)
Chris Dooley-Harrington, LICSW
Korie DeBruin, LGSW

The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a Master's thesis nor a dissertation.

## Abstract

Childhood trauma's prevalence is apparent to therapists in the field, validated by statistics from national trauma studies, out-of-home placements and the longitudinal Adverse Childhood Experiences (ACE) study. The purpose of this project is to look at the therapists' perspective in using somatic interventions in childhood trauma treatment. Using a qualitative design, five therapists were interviewed regarding what somatic interventions they used with traumatized children and how they found the interventions to be useful. Transcribed interviews were coded for theme analysis; the emerging themes correlated with current related literature. The findings showed the themes of safety, engagement and embodiment to be key factors in empowering children and resolving trauma. Specific interventions that encapsulated those themes were noted. Additionally participation in the somatic interventions (i.e. yoga, mind-body work, expressive arts) by the therapist while treating the child was found to be a benefit of using somatic interventions and a possible deterrent from vicarious trauma.

Acknowledgments

I would like to thank the therapists who participated in this study for the amazing work they do with the most vulnerable of populations. The dedication to your clients, to their well-being and to the field are beyond admirable.

Thank you to my committee members for their outstanding support throughout this project. To my committee chair, Colin Hollidge, your knowledge and expertise in trauma were integral to this project; Chris Dooley-Harrington and Korie DeBruin your encouragement and enthusiastic participation were appreciated more than you know.

To my family and friends words do not express the depth of my gratitude for your being in my life.

Table of Contents

## Introduction

For those therapists who choose to work with children the prevalence of childhood trauma is obvious. Significant studies have been conducted to validate the field experience. The National Child Traumatic Stress Network (NCTCN) cites several studies examining the prevalence of traumatic experiences of children and adolescents. One national study found that 60.7% of males and 51.2% of females aged 15-24 reported exposures to one or more traumatic events. An epidemiological study conducted in 2004 found urban youth in Chicago had an 82% lifetime occurrence of exposure to trauma. The longitudinal Adverse Childhood Experiences (ACE) Study conducted by the Centers for Disease Control and Kaiser Health Plan interviewed over 30,000 adults on their exposure to childhood traumatic experiences such as abuse, neglect, domestic violence, alcohol or substance abuse, mental illness, parental discord or crime in the home. An ACE score was given and measured against risk for health, social/emotional/ behavioral problems and early death. The results found two thirds of participants report at least one adverse child event and one in five respondents identified three or more adverse childhood events (ACE, 2010). With substantial statistics on the incidents of childhood trauma, near daily headlines of school violence, residential treatment facilities and foster homes overflowing with over half a million youth in placement (USDHHS, 2012), working with traumatized children is all to common place.

As far back as the mid-nineteenth century the concept of trauma has been defined as the overwhelming of the psychological and biological processes within human beings following a potentially life-threatening incident or experience (Friedman, Keane, & Resick, 2007). In 1889 Pierre Janet recognized how unresolved trauma effects an individual's ability to integrate their experiences; thoughts, feelings, sensations, behaviors, physical reflexes and

spiritual insights become parts, separations of the self (Ogden, Minton & Pain, 2006). The more recent (1980) trauma diagnosis of Post Traumatic Stress Disorder (PTSD) has three central diagnostic symptoms that include: intrusive re-experiencing, avoidance and hyperarousal. These symptoms cause flashbacks, freezing, numbing, or dissociating, uncontrollable startle reflex and unexplainable somatic pain. With these experiences traumatized individuals find, as Janet recognized, their body and mind are separated.

When defining childhood trauma there are several other factors to take into account, the age of the child, their developmental stage at the time of the trauma and time of treatment, the number of episodes, who the perpetrator was and what meaning the child assigns to the incident. These elements contribute to making childhood trauma more difficult to generalize a definition as well as more complicated to treat (Hansen, 2011).

In an effort to diagnose and treat childhood trauma, proposals to include Developmental Trauma Disorder (DTD) criteria for children and adolescents were written but not included in the revised Diagnostic and Statistical Manual Version Five (DSM-V). As a result childhood trauma has yet to be specifically defined in psychiatric, psychological or social science literature. Specific work groups within the task force of the proposed DSM-V would have helped operationally define childhood trauma for use in evidence-based research. According to chief author of the proposed Developmental Trauma Disorder (DTD), Bessel van der Kolk, the committee of the DSM-V determined there was not enough supporting evidence to include the DTD in the fifth edition. Despite van der Kolk's research on childhood trauma that included over 20,000 participants and dozens of research articles the definition, assessment and treatment of childhood trauma will remain unaddressed within the psychological diagnostic field for most of the next decade (van der Kolk, conference

presentation, October 12, 2013).

Consequently, the millions of children between birth and nineteen years who suffer trauma will continue to be misunderstood likely because this population is neither adequately studied nor receiving services in the United States (Perry, 2000). With this misunderstanding and the exclusion of DTD comes the lack of a comprehensive generalized definition of childhood trauma and more importantly, a lack of treatment interventions.

The DTD would have defined childhood developmental trauma as an overwhelming experience of childhood, which would include neglect, psychological, emotional, physical, sexual maltreatment and abuse and/or attachment separations (Braustein, 2010) Trauma researcher van der Kolk describes DTD as follows:

> *[DTD is]: organized around the issue of triggered dysregulation in response to traumatic reminders, stimulus generalization and the anticipatory organization of behavior to prevent the recurrence of the trauma effects. Based on the concept that multiple exposures to interpersonal trauma, such as abandonment, betrayal, physical or sexual assaults or witnessing domestic violence, have consistent and predictable consequences that effect many areas of functioning. Children have a great deal of difficulty restoring homeostasis and returning to baseline. Insight and understanding about the origins of their reactions seems to have little effect. Treatment must focus on three primary areas: establishing safety and competence, dealing with traumatic reenactments and integration and master of the body and mind* (van der Kolk, 2005, p. 401).

According to many trauma researchers (Dimasio, 1999; Hansen, 2011; Levine, 2007, 2010; Malchiodi, 2008; Ogden, Minton. & Pain, 2006; Perry, 2000; Siegel, 2006; Solomon, & Heide, 2005; van der Kolk, McFarlane, Weisaeth, 1996; van der Kolk, Bessel, 2005, 2007) traditional talk therapy or cognitive behavioral techniques may not be as effective with traumatized children and adolescents with limited insight or understanding about the origins of their trauma reactions and with treatment needs revolving around safety, competence, coping, integration and mastering the body and mind.

According to the California Evidence-Based Clearinghouse for Child Welfare (CEBC, 2013) website only two trauma interventions were well supported by research evidence, Eye Movement Desensitization Reprocessing (EMDR) and Trauma Focused-Cognitive Behavioral Therapy (TF-CBT). Interventions on the website are listed as 'supported by research', 'promising' or 'not able to be rated'. EMDR is primarily a somatic intervention; TF-CBT has somatic elements but remains a more cognitive based or talk-centered means of resolving trauma. There are over twenty possible interventions listed on the CEBC website that are either promising or not able to be rated yet. Assuming there are other potential interventions not yet listed, the question becomes what other interventions are therapists using with traumatized children? In the interest of this research specifically, what somatic interventions, those that utilize the physical body and senses to intervene and potentially resolve childhood trauma, are therapists using?

The use of somatic interventions, especially with pre-verbal trauma, could be a helpful if not necessary course of treatment for children who have experienced 'unspeakable' traumas. The intent of this research is to investigate therapists' perspectives on treating

childhood trauma with somatic interventions. Specifically identifying what somatic interventions have been used, what is found to be helpful and what the future potentially holds for somatic interventions with traumatized children because:

> *The most profound legacy of trauma may be this timeless feelings of being battered by unbearable physical sensations: crushing feelings in your chest, agonizing tension in your shoulders, and burning pain in your abdomen, accompanied by the conviction that you are utterly helpless to do anything about it* (Emerson & Hopper, 2011).

## Literature Review

Review of the literature describes current characteristics of childhood trauma through explanation of human brain development, processing mechanisms and the effect of trauma on the developing brain. The literature describes current evidence based practices to treat childhood trauma cognitively with somatic interventions being used to address the specific sensory and physiological responses clinicians can implement for relief of traumatic symptoms.

Though there is no concise generalized definition of childhood trauma, the literature does develop an understanding through recent neuroscientific discoveries. Neuroscience has shown how the brain develops (LeDoux, 1996; MacLean, 1985), how "states" and "traits" effect behavior (Perry, et.al 1995) and how traumatic triggers can effect particular parts of the human brain (Levine, 2010). For the purpose of this literature review the researcher will define childhood trauma as: a single or multi-experience event threatening actual or perceived survival, of either the child or the child's primary caregiver, overwhelming the child's physiological, emotional and cognitive development.

### Human Brain Development

Advancements in neuroscience in the past two decades have demonstrated human brain development with precision and accuracy; giving clinicians a wealth of information and understanding. In the 1980's MacLean's studies described human brain development as 'a brain, within a brain, within a brain' explaining our 'triune brain' as developing at three distinct levels (MacLean, 1985).

Beginning with the innermost portion of the brain at the brainstem and cerebellum known as the reptilian brain, this portion of the brain is where all vital survival functions of the human reside. The reptilian brain regulates homeostasis, the state of equilibrium the body needs to maintain temperature, heart rate, breathing etc.; it manages arousal and generally is related to sensorimotor information processing, startle responses, sucking responses and reproductive drives (Ogden, Minton & Pain, 2006).

Surrounding the reptilian brain is the limbic brain, the source of all emotion, memory, learning and instinct. Containing the amygdala and hippocampus, the reflexive response of all human drives (flight, fight, freeze, feed, etc.) are regulated by the amygdala and remembered by the hippocampus of the limbic system. The autonomic nervous system, made up of the sympathetic (activating) and parasympathetic (calming) nervous systems, are also contained within the limbic system (Rothschild, 2000).

Finally, last to develop, is the neo-cortex, the area of cognitive processing, communication, vision and hearing. This area of the brain is focused on what is occurring in the external world and how the self relates, it contains abstract thinking, insight and self-awareness (LeDoux, 1996). The pre- frontal cortex specifically contains the executive functioning area of the brain allowing humans to make decisions, control behaviors, understand consequences and formulate belief systems. The neo-cortex completes the development of higher mammals (Curran, 2010).

All three levels of the brain understand and respond to the environment differently. One level can become dominant and override the others and during brain development one level may be stunted in growth and development (Ogden, Minton & Pain, 2006). The three

levels of the brain are also simultaneously intertwined and dependent on each other for processing the environment (Damasio, 1999). This creates a hierarchal system where the neo-cortex has the responsibility for abstraction and perception, reasoning and language, the limbic system is responsible for learning, implicit memory and emotional response while the reptilian portion is considered a lower level functioning of basic human survival. These three levels are often described as the cognitive, emotional and sensorimotor portions of the brain, integrated to process and respond to the environment in order to survive and thrive. Theorists and clinicians differ on how best to approach this integration, some believe top-down processing (cognitive to sensorimotor), using talk therapy and thought processing will help understand experience (Beck, 2011; Cohen, Mannarino, & Deblinger, 2009) others believe a bottom-up (sensorimotor to cognitive) process best understands human experience, especially traumatic experience (Dimasio, 1999; Flint, Lammers, Mitnick, 2005; Hansen, 2011; Levine, 2007, 2010; Ogden, Minton, & Pain, 2006; Perry, 2000, 2001, 2009; Siegel, 2006; Solomon & Heide, 2005; van der Kolk, McFarlane, Weisaeth, 1996; van der Kolk, 2005, 2007).

**Top-down, bottom-up processing.** Cognitive theorists and clinicians promote a 'top-down' level of processing whereby human brains think, feel and respond dominated by the neo-cortex's ability to process information and make informed decisions, the limbic system's ability to remember and learn from the experience and finally the reptilian's brains ability to return to physiological balance. Top down processing involves use of language through responses and thoughts (cortical brain functions) first, then to explore feelings and memories (limbic brain functions) as they relate to reactions (flashbacks, nightmares, dissociations of the reptilian brain).

Some trauma theorists and clinicians identify the brain's development and integration as a 'bottom-up' processing. The brain responds first from the sensorimotor level, keeping the human safe and alive, (beginning at the bottom or reptilian brain) responding to threat (at the limbic level of the brain) with a fight, flight or freeze response. Finally, once these portions of the brain interact, cognitive functioning (in the neo-cortex) will process information and provide a plan to assure continued survival.

**Trauma experienced**. Neuroscience has shown that trauma processing occurs at the biological and unconscious level of human brain development, the sensorimotor and emotional - the reptilian and limbic portions of the brain. The sympathetic nervous system within the limbic brain is affected by any sense of danger, signaling its adrenal medulla to release stress hormones, epinephrine and norepinephrine. These quickly saturate the amygdala causing the flight-fight-freeze response. Increasing levels of cortisol within the hypothalamic-pituitary-adrenal system are also activated; this could potentially damage neurons in the hippocampus (our memory storage) explaining the inability of a young child to remember or communicate an experienced trauma. Adrenal hormones also flood the immune system and contribute to hyperarousal, leading to exaggerated startle responses (Solomon & Heide, 2005).

The flooding of hormones to the limbic system overwhelm the system's ability to process and transfer it to the neo-cortex where it can be understood narratively and stored as part of a person's life, where other non-traumatic life experiences reside. With cortisol, adrenaline, norepinephrine and epinephrine flooding the cognitive level of the brain it gets overridden by the emotions and instincts for survival of the limbic and reptilian levels of the

brain (Levine, P., 2010; MacLean, P.,1985; Perry, B., 2000, 2001; Solomon & Heide, 2005; van der Kolk , B. et. al, 1996).

Attempting top-down processing, using cognitive interventions, talking through the traumatic experience, providing a narrative or recalling memories of the event may not provide relief if the brain has not integrated the trauma at the cognitive and emotional levels. The trauma is experienced and stuck at the bottom levels, the reptilian and limbic levels of the brain. This would indicate the use of 'bottom-up' processing using somatic interventions as an appropriate treatment for trauma.

While the human brain is developing, traumatic experiences can have a profound effect on brain development. Understanding how the human brain develops and how it processes trauma helps us to understand how trauma affects the developing brain of a child.

**Developmental Trauma**

A newborn infant's brain begins to develop from its reptilian brain the basic survival instincts, needing food, water, and human connection in order to maintain survival and continue to develop. These necessities are provided from a primary care giver. Neglect or threat to survival from the primary caregiver will result in a failure to thrive and eventually to death (Perry, 2009).

**Attachment to caregiver.** Attachment to a primary caregiver profoundly effects the development of the limbic portion of the brain. (Bretherton, 1992, Perry, 2000, 2001, 2009). As the limbic brain develops the infant, with an attachment to a primary caregiver, begins to experience empathy, humor, affect regulation and attachment (Perry, Pollard, Blakely, Baker,

& Vigilante, 1995). Neglect and/or the experience of trauma, especially perpetrated by the caregiver, creates an overstimulation and saturation of stress hormones that can potentially remain in the brain and body permanently. The brain will develop specific 'states' and if those states (traumatic stress hormones) continue the brain will develop permanent 'traits' - permanent stress (Perry, 2001).

**States and traits.** The developing brain will respond or change with repeated input, patterns and messages; pruning or withering away those synaptic connections that don't get used. Those connections that continue to occur create a use-dependent state, known in modern neurology lexicon as 'use it or lose it' (Braustein, 2010, Perry, 2000, 2001, 2009). When an infant or child is under threat or in fear, the activation of neurons, neurohormones and neurotransmitters that occurs will alter the developing brain. Repeated activation will cause the brain to 'reset' into a use-dependent state of persistent activation of threat or fear (Perry, 2009). With continued activation of this state the brain can develop into a maladaptive trait of persistent threat and fear. With little resources an infant or young child chronically traumatized at this stage of development may develop several life-long maladaptive traits. Traumatized children entering school and/or mental health services due to maladaptive emotional, behavioral and cognitive problems are stigmatized and 'treated' for the very traits that allowed them to survive.

These traits often become symptoms of diagnoses such as Reactive Attachment Disorder, Separation Anxiety Disorder, Oppositional Defiant Disorder, Bipolar Disorder, Dissociative Disorder, Attention Deficit Hyperactivity Disorder, Borderline Personality Disorder or Personality Disorder (Perry, B. et. al, 1995; van der Kolk, B., 2005). Understanding when

trauma activated responses move from states to maladaptive traits, how bottom-up brain development and processing occurs, and knowing how attachment effected a child were included in the proposed Developmental Trauma Disorder (DTD). The long list of diagnoses previously listed could have been eliminated by giving clinicians a broader understanding of trauma on the developing brain and effective treatment interventions to use with DTD (van der Kolk, conference presentation, October 12, 2013).

Despite the exclusion of DTD, van der Kolk's work on reframing developmental trauma with a holistic lens by understanding all three levels of the brain from a bottom up processing perspective can guide future research and interventions. If we understand the regulatory competency of the reptilian brain to recognize and modulate arousal, and the interpersonal competency of the limbic brain to form attachments and relationships, along with the cognitive competency of the neo-cortex to think abstractly we have an integrated 'whole brain' perspective. Understanding the brain's developmental integration from the experience of trauma helps us determine effective interventions (Blaustein, 2010).

**Trauma Interventions**

Treatments for trauma have been evolving since mental and psychiatric practices began (van der Kolk, 2007). Individual traumas and how they are processed and integrated into day-to-day living are as vast as the number of people traumatized. A single treatment intervention, modality or theory cannot work for every individual who suffers complex developmental trauma (Blaustein & Kinniburgh, 2010). A review of historical and current treatment interventions and a closer look at somatic interventions will expand understanding of the treatment possibilities.

**Historical treatments.** Trauma definitions and treatments have been studied and argued since the 1880's, with the first recognition of childhood sexual trauma occurring in France during the last half of the nineteenth century (van der Kolk, 2007). Janet provided the first attempts at defining and treating traumatized individuals; his work specifically addressed dissociation and traumatic memories. Janet developed a theory of the structure of the mind, similar to the triune brain currently validated with neuroscience. In addition he demonstrated how the 'bottom' levels of the brain the reptilian and limbic brains produce dissociation as a result of unresolved traumatic memories (van der Kolk, 2007). This establishes an early history of trauma evolving from the somatic and emotional parts of the human brain.

Generally, early treatment of trauma in the United States was related to treating those traumatized in war. Charles Myers first coined the term 'shell-shock' in 1915 to describe the effects of war on soldiers. 'Shell-shock' would later be expanded upon and labeled Post Traumatic Stress. In the 1970's Mardi Horowitz and Lenore Terr began to look closer at civilian trauma and treatment (van der Kolk, 2007).

Terr studied childhood trauma exclusively; she was the first to study childhood trauma in the field, focusing her early work on the children of the Chowchilla school bus kidnapping. Through her research with these children she defined two types of trauma. Type 1 trauma usually involved a single event and Type 2, also called complex trauma, was defined as involving multiple events. Both types of trauma required interventions and many interventions have been developed over the decades since Terr's research.

**Evidence based trauma therapies and interventions.** Current evidence-based

interventions include a narrative or cognitive based treatment to help the child tell the story and give the experience meaning, allowing the therapist to guide the child to restructure and subsequently resolve the trauma. This 'top-down' processing intervention uses the neo-cortex, the area of the brain used for cognitive processing of information, verbal communication, self-awareness and reflection, executive functioning and conceptual thinking as the entry point (Ogden, Pain, & Fisher, 2006).

***Cognitive behavior therapy and trauma focused- cognitive behavior therapy.***

Cognitive behavioral therapy (CBT) originated with Aaron Beck as a departure from the psychoanalytical perspective of depression and anxiety. Beck approached depression and anxiety as more of a 'thinking problem' with cognitive distortions that could be reframed, reexamined and resolved, improving the client's symptoms (Beck 2011). CBT's approach to trauma is through establishment of a strong therapeutic alliance and the collaborative efforts of the child emphasizing the specific end goal of treatment (dissipation of symptoms). CBT has significant evidence based outcomes for success [See California Evidence-based Clearinghouse for Child Welfare (CEBC) website: http://www.cebc4cw.org]. Equally well evidenced is the extension to CBT that works specifically with traumatized children and adolescents known as Trauma-Focused - Cognitive Behavior Therapy (TF-CBT) (Cohen, Mannarino and Deblinger, 2009). The principles involved in treating traumatized children with TF-CBT involve (1) gradual exposure (desensitization) to dysregulated affect, behavior or cognitions, (2) inaccurate, distorted or unhelpful thoughts, (3) relaxation skills and cognitive coping strategies are taught prior to desensitization, (3) attempt to change the distorted thoughts, (4) inclusion of parents or caregivers to reinforce the skills and to

'witness' the narrative (crucial to relapse prevention and resolution), (5) a written narrative of the trauma with cognitions and emotions incorporated resulting in extinction of trauma symptoms. The current 'gold standard' of evidence based practices for children and adolescents experiencing trauma, the manualized TF-CBT model is widely used. A national certification process has been established [Allegheny Health Network: https://rtfweb.wpahs.org/tfcbt/].

Emphasizing the logical, linear, literal and language-driven aspect of the trauma, cognitive processing has been the primary focus of treatment. Somatic and self-regulatory aspects have played a secondary role, leaving a challenge for the often non-verbal processing necessary to fully integrate and resolve trauma (Siegel, 2006). These higher level or top-down processing therapies are not enough to assist clients in the autonomic nervous system responses of the bottom levels of the brain that need recognition and reprogramming in order for trauma recovery to occur (Ogden, Minton & Pain, 2006).

In some cases, depending on the length, severity and developmental growth of the child, it may not be possible for cognitive processing interventions to be effective if the trauma overwhelms the area of the child's brain that processes language, literally leaving a traumatized child 'speechless' (Solomon & Heide, 2005). In pre-verbal trauma the language area of the brain is immature and 'top down' interventions would not be possible. Somatic interventions that process through a 'bottom-up' method directly address the bodily experience of trauma's effect on the primitive, automatic and involuntary functions of the reptilian and limbic levels of the brain (Ogden, Pain, & Fisher, 2006).

To these evidence based 'top-down' cognitive practices and techniques, we now add

'bottom up' interventions that address the repetitive, unbidden physical sensations, movements, inhibitions, and somatosensory intrusions characteristic of unresolved trauma.

**Somatic interventions.** There have been several efforts at trauma interventions related to somatic or physiological aspects, Shapiro's Eye Movement Desensitization and Reprocessing, Levine's Somatic Experiencing, Ogden's Sensorimotor Psychotherapy, and Craig's Emotional Freedom Technique are all somatic interventions that are being used to differing degrees and differing effects, with varying levels of evidence-based or peer-reviewed research methods to substantiate successful resolution of trauma (Curran, 2010). Additionally, yoga has been introduced as a somatic intervention for trauma, after recent scientific evidence has shown the centuries old practice provides relief from somatic symptoms of trauma (Emerson & Hopper, 2011).

According to Ogden, Minton & Pain (2006) somatic interventions do not exclude the 'top' portions of the brain or simply use the body as the frame of reference. Somatic interventions turn to the sensations, impulses and movements of the body in order to open up the non-verbal world of the client, leading to mindful awareness. This can then be used in the more traditional psychotherapeutic or top-down approaches.

Through the use of neuroimaging, traumatized people have been studied while under high stress and/or trauma-triggered responses. The findings from these studies show that the cortical area of the brain, containing executive functioning skills of sound decision-making, understanding cause and effect, consequences of action and inhibiting anti-social behaviors are not activated while under stress (Ogden, 2006). Instead the higher thinking parts of the brain regress and automatic behavior (fight, flight, freeze) responses occur instead; cognition

gets high-jacked, physical, instinctual behaviors take over.

When trauma is triggered, the traumatized person may automatically respond with physical actions that were appropriate at the time of the trauma but are longer relevant. For example the child who automatically ducks when an adult raises their voice or fist or in more extreme cases dissociates into another personality (Ogden, Minton & Pain, 2006).

The experience of somatic symptoms that can plague and further traumatize the child or adolescent are intrusive images, sounds, smells, body sensations, physical pain, constriction, numbing and an inability to modulate arousal. The somatic interventions categorized in the remainder of the literature intervene directly with these symptoms.

***Eye movement desensitization reprocessing.*** Developed by Francis Shapiro in 1990, Eye Movement Desensitization Reprocessing (EMDR) has several phases in assisting clients to reprocess the traumatic event. EMDR does not require a detailed recollection of the trauma itself; the client's negative emotions, physical sensations or distressing picture or scene of the target is measured using a Subjective Units of Disturbance (SUD) scale. The reprocessing of these disturbing emotions and sensations occurs through the use of directed eye movement, tapping or tones to desensitize the negative event and associated beliefs from the past to the present (Shapiro, 2002, Stickgold, 2002). Essentially the client focuses on an external stimulus (following light, finger, sounds that move from side to side) while reprocessing an emotionally or physically disturbing sensation experienced with the trauma.

EMDR has been associated with the same brain processing as in Rapid Eye Movement (REM) sleep by Harvard psychiatrist and sleep specialist Robert Stickgold (2002). Stickgold (2007, 2008) found during his REM sleep studies the same effect that

occurs with EMDR. Sensory cues related to trauma memory processing can effectively resolve or reprocess the trauma.

With over twenty controlled outcomes studies and three meta-analysis studies exploring the efficacy of EMDR in treating PTSD, it has earned accolades and approval from the Department of Veterans Affairs, the American Psychiatric Association and Substance Abuse and Mental Health Services Administration. Along with TF-CBT, EMDR is the only evidence-based practice highly endorsed by CEBC (2013) for use with traumatized children and adolescents.

***Sensorimotor psychotherapy.*** During the 1970's while working as a yoga/dance teacher and psychiatric hospital technician Sensorimotor Psychotherapy (SP) originator Pat Ogden saw how disconnected psychiatric clients were from their bodies; how cognitive processing of their trauma seemed to trigger trauma symptoms leaving them at the mercy of their body's uncontrollable responses to environmental triggers. In 1981 Ogden founded her school of SP and began training other clinicians by drawing on somatic therapies, neuroscience, attachment theory and cognitive approaches (establishing bottom-up processing interventions).

The trained sensorimotor psychotherapist is able to incorporate practices in psychodynamic psychotherapy, cognitive-behavioral therapies, neuroscience and theories of attachment and dissociation as the foundation for integrating body-oriented interventions. This holistically treats the traumatized individual, demonstrating a true integration of the three levels of the brain and bottom-up processing (Ogden, Minton & Pain, 2006).

With the trained observation and facilitation of the therapist the clients pay close

attention to their inner body sensations and feelings in the present moment. Recognition and understanding of these bodily sensations can then move the clients to improvements in self-regulation (Hansen, 2011). The therapist's task is to keep the client in the bodily sensation of the memory, tracking their arousal level and either discharging the physical 'sense' or teaching the client skills to modulate their affect during those sensations (Ogden & Minton, 2000).

Treating childhood trauma, in particular, pre-verbal childhood trauma, SP alleviates trigger responses unknown to the child. This is done by helping modulate affective dysregulation and building a stronger sense of self-control. This improves the child's trauma symptoms within the context of natural 'bottom-up' brain development and processing.

***Somatic experiencing.*** Similar to SP but with a greater focus on relief of trauma specific responses Somatic Experiencing (SE) is a body-awareness approach that restores self-regulation by allowing the body's instinct to a fight or flight response to occur in present time. SE addresses the 'completion of a corrective trauma response' despite those responses being denied or unavailable at the time of the traumatic experience(s) (Levine, 2010).

Levine's work is focused specifically on childhood trauma, whether treated in childhood or adulthood; suggesting a first visit to the dentist or doctor can be a traumatizing event for a child that continues into adulthood (Levine, 2007). Based on animal nature Levine (2007) approaches SE as an animal in the wild with the instinctual responses to survival of fight, flight or freeze. In most creatures immobility or 'freezing' occurs when survival is threatened; Levine (2007) links this instinct to dissociation and inaccurate or disconnected memories in human trauma responses.

Using specific guided exercises in grounding, containment and safety SE provides clients with the opportunity to defend against the trauma or escape from it, thereby reinstating the body's natural energy in the face of trauma. Levine (2010) believes when the body contains the physiological energy of the trauma without release, several biological processes are affected. The build up of stress hormones, the increase in heart rate and blood pressure, muscle atrophy and the inability to process and store memory are affected, both for learning and for emotional regulation, especially in the developing brains of children (ACE, 2010; Anda, et.al, 2006; Dimasio, 1999; Friedman, Keane & Resick, 2007; LeDoux, 1996; Levine, 2007; Ogden, Minton & Pain, 2006; Perry, 2001; Solomon, & Heide 2005; van der Kolk, 1994). SE interventions go directly to the source, the reptilian brain, in its 'bottom-up' processing of trauma.

***Tapping techniques.*** Using the ancient tradition of Chinese meridian therapy with symptoms of emotional or traumatic issues, developer Gary Craig is clear in the unconventional nature of his intervention. Rather than using needles as in acupuncture treatment, Emotional Freedom Technique (EFT) uses an individual's fingertips to tap on the meridians once a stated intention or purpose has been established such as relief from a specific symptom. Tapping on the meridians stimulates and resolves the disturbances or dissonance in the meridian system, restoring the body's homeostatic state. EFT has been scientifically researched and validated in the literature for relief of both physical and emotional symptoms in as little as a single session (Church, et. al, 2010, 2012,2013 Craig, 2009, Rowe, 2005).

Tapping bypasses any of the limbic or cognitive portions of the brain; EFT

approaches only the body's energy system in its intervention (Craig, 2009). Prior to beginning a tapping session the clinician focuses on specific events, not generalized ideas to organize the intervention. For example if a child has multiple traumas: physical abuse by parent, leading to divorce or separation and re-location, followed by legal proceedings, EFT would address each of these individually, setting a different tapping pattern on different meridian points.

Another form of tapping therapy, developed by Roger Callahan, called Thought Field Therapy (TFT) follows the same format, working with stimulation of the meridian points to address the emotional and cognitive challenges on a somatic level. Using relatively small samples or case examples, research in Thought Field Therapy tapping techniques has shown reduction in post-traumatic symptoms in immigrants (Folkes, 2002) and using neuroimaging, Diepold and Goldstein (2008) were able to demonstrate elimination of flashbacks using TFT.

***Yoga.*** Centuries ago the mind-body-spirit discipline of yoga originated to bring balance and peace; more recently yoga practice has been used as an intervention for trauma (Emerson & Hopper, 2011). With a distinctly trauma sensitive approach, using key themes of experiencing the present moment, personal safety, personal agency and choice; trauma sensitive yoga has been showing positive results in trauma resolution (Emerson & Hopper, 2011).

Yoga and mindfulness practices have been taught and practiced with traumatized and social, emotionally, behaviorally disturbed or dysregulated children in school settings with successful results over the last decade (Gillen & Gillen, 2007, Hawn, 2011). The mind-body connection that has been yoga's legacy for thousands of years continues to prove its

longevity of effectiveness. In working specifically with traumatized individuals, Emerson & Hopper (2011) use trauma sensitive yoga adjusting the practice to fit the individual somatic needs of the client.

Using trauma sensitive yoga, Emerson and Hopper (2009) researched participants with PTSD receiving treatment at Bessel van der Kolk's Trauma Center. Findings showed positive results for reduction in frequency of PTSD symptoms after eight sessions of yoga postures, meditation and relaxation. Recently the Trauma Center has completed research on the improved heart rate variability of trauma sensitive yoga for individuals with PTSD. Their findings showed a healthy decline in heart rate, from the elevated heart rate of traumatic re-experiencing (van der Kolk, workshop, 2013).

Gillen and Gillen (2009) have designed a yoga program, Yoga Calm® to address the emotional dysregulation of children in a school setting. Integrating somatic interventions of body postures and relaxation with social/emotional learning exercises. This yoga program shows continued success with 'bottom-up processing' in a learning environment (Holland, 2004; Sewacki & Cook-Cottone, 2012).

The meaning of the word yoga is to yoke or unite, bring together, body, mind and spirit. Trauma can break a person's body, mind and spirit. Trauma can become stuck in the body with uncontrollable trigger responses (hyperarousal) or in the mind with flashbacks and reenactments (re-experiencing). Trauma breaks the spirit with avoidance and denial. Working from the bottom up, uniting the whole person, yoga has shown to be an intervention that successfully addresses the needs of traumatized people.

In addition to the reviewed somatic interventions clinicians are utilizing expressive

therapies such as art, dance, psychodrama, movement and writing or mind-body practices of mindfulness meditation, Tai Chi or Qi gong for use in trauma. Several clinicians and researchers have developed somatic interventions such as Gendlin's Focusing, (Gendlin, 1978) Perry's Neurosequential Model (Perry, 2009) and the Kurtz's Hakomi Method (Ogden & Minton, 2000) to address trauma. Sensory integration, bioenergetics, psychoneuroimmunology and rebirthing/breathwork are also somatic interventions developing in the literature.

None of these somatic interventions have yet to meet the standard for evidence-based practice in working with traumatized children. The evidence-based practices of TF-CBT and EMDR began as practice based interventions, clinicians' evidence of success brought about further research study leading to establishment as an evidence-based practice. Many somatic clinicians operate from a practice-based paradigm, using clinical skills, theoretical knowledge and personal experience to uniquely serve individual clients' needs (Sackett, 1996).

More and more practice and research is focusing on physiological, somatic interventions in trauma, recognizing the body's innate response when survival is in jeopardy (Blaustein,. & Kinniburgh, 2010; Church, 2010; Craig, 2009; Diepold & Goldstein, 2008; Folkes, 2002; Friedman, Keane & Resick, 2007; Hansen, 2011; Lubit, et al, 2003; Malchiodi, 2008; Ogden, & Minton, 2000; Ogden, Pain & Fisher, 2006; Perry, 2000, 2009; Shapiro & Maxfield, 2002; Solomon & Heide, 2005; Stickgold, 2007; van der Kolk , McFarlane, Weisaeth, 1996; Weissbecker, et al. 2008). This study will address the use of somatic interventions in work with traumatized children through the perspective of the therapist.

## Methodology

The purpose of this study is to understand the practices and interventions that therapists using somatic therapy feel are useful in working with traumatized children. Findings will provide clinicians with guidance and specific strategies that can be used when working with traumatized children. This information was gathered using semi-structured interviews with mental health practitioners who currently use somatic interventions when working with traumatized children.

### Sample

The sample for this study was drawn from a search of the Internet websites offering graduate level training in somatic interventions. They included Thought Field Therapy (rogercallahan.com) EMDR Institute (emdr.com), Sensorimotor Psychotherapy Institute (sensorimotorpsychotherapy.org), Somatic Experiencing Trauma Institute (traumahealing.com), and Yoga Calm (yogacalm.org). Inclusion in the study was determined by subjects being graduate level licensed clinicians and recent use of somatic interventions (within the past twelve month period) in treating childhood trauma. Exclusion criteria included clinicians who utilized somatic interventions with adults who had experienced childhood trauma. Five subjects participated in the research project.

### Demographics

All subjects held an advanced degree in social services (LMFT, MSW/LGSW, and PsyD, LMSW). Length of practice varied from seven years to twenty-five years; subjects identified working with a significant number of traumatized children over the course of their practice. One subject projected 85-90% of her current caseload consisted of traumatized

children; while another stated 100% of her clients were traumatized children. Practice settings included, in patient hospital, adolescent mental health, chemical dependency/dual diagnosis, residential treatment, elementary school social work and private practice.

**Data Collection**

Subjects who agreed to participate were sent a follow-up e-mail with the interview questions and Informed Consent Agreement attached. Interviews were scheduled after the Informed Consent Agreements were received. Interviews were held for thirty to forty-five minutes beginning February 24th, 2014 by telephone in the researcher's private practice office during business hours. Interviews began with informed consent questions followed by recorded verbal consent to participate. Demographic questions addressed participants' professional licensure, practice setting, length of practice, number and assessment of traumatized children. Open-ended questions were used to gather information on types of somatic interventions used with traumatized children and therapists' perspective of their usefulness. The interview concluded with an invitation for questions or comments from subjects.

**Protection of human subjects**

The Institutional Review Board of the University of St. Thomas granted approval for this research study. All subjects received Informed Consent Forms in their e-mail response to participate and they were directed to electronically sign the forms (Appendix A). In addition, subjects were questioned at the beginning of the interview on their understanding of the purpose of the study, risks and benefits, confidentiality followed by verbal informed consent.

All information pertaining to this research was stored on a locked, password-

protected personal computer or in a locked file cabinet in a locked office. All transcripts and voice recordings were destroyed immediately upon final submission of this study to research committee.

**Measurement and Data Analysis**

Ten questions (Appendix B) were asked during the semi-structured interview. All additional questions or comments were recorded parenthetically within the transcription. Participants were also given an opportunity to address additional questions or comments as well as final comments.

Transcribed interviews were then coded for emerging themes. Coding notes within the transcripts were highlighted with various colors to further identify and recognize findings for discussion. Themes are discussed in the following results section.

## Results

Results of this study are based on analysis of semi-structured interviews conducted with five therapists currently treating traumatized children using somatic interventions.

**Overview of Themes.**

The three general themes that emerged from this study were: Safety, Embodiment and Engagement. Each of these themes will be discussed further in the following paragraphs.

**Safety**. The theme of safety came up in every subject interview as a primary concern in working with this population. This was not surprising since the general consensus among trauma researchers and therapists is the need to establish safety for the client. Based on the findings, safety refers to building trust of the therapist by giving the child a sense of control. To illustrate this point, one subject spoke of the need for safety by stating:

> *In building trust I usually go very slow, take a long time building rapport and safety... I do a lot of personal space, boundary exercises to build safety and provide grounding. So I might begin with determining how close I can sit next to the child by using a pillow or stuffed animal to get permission; I will ask them to find a place in my office where they feel safest, it may be standing next to the door.*

Another subject who uses yoga spoke to safety when she described a client:

> *This particular child cannot stay still at all, really has a hard time, through the whole thing was kind of doing his own thing, running around but by the end of the time with the lights off, he crawled underneath a table. I just kind of gently patted his back during the relaxation and he was able to calm his body and just lie completely still for maybe the first time in a long time and I*

> *believe register the emotion of what it feels like to relax so that he can remember this feeling at a later date, at a time when he needs it, that he's actually felt this feeling before…something that brief, I really believe will register, just like trauma registers in the body I think that feeling of calm can register so they can access that as needed.*

A subject working with traumatized children from birth to three years old stated:

> *Establishing a sense of safety with younger children is probably the most important element in working with them. We may be in the middle of an intervention and if it appears they are not feeling safe or not ready to continue I will quickly move back…begin playing a game, take out the puppets and just play to re-establish their sense of control and safety.*

The subjects also stated that establishing trust with the therapist and the environment are important in initially building the alliance but also in maintaining the trust so interventions and therapy can continue.

**Engagement.** Based on these findings, engagement refers to the formation of a therapeutic alliance and a strong rapport, enabling the therapist to fully engage the child in somatic interventions. All subjects identified engagement as an essential factor in working with traumatized children in order for the sense of safety to be felt. Safety was established through the engagement of the child and therapist.

One subject spoke of engagement as:

> *a good solid relationship with them and they know they're safe with you they may be willing to 'write or draw' the worst thing that happened to them,…understanding that it's a long slow process to build rapport and a*

> *trusting relationship with a traumatized kid…you have to respect them when they don't want to talk about it but you have to find a way in, giving them the sense of their own body, an awareness that they are safe and strong, teaching them about their own brain and trauma's influence on their behavior all builds trust and relationship, they have to connect with you…kids connect through their physical body and senses, that's where somatic interventions are so helpful, meeting them where they are, joining with them in the physical, sensory world they live in… so many have experienced trauma pre-verbally. Building relationship with kids you need to understand it's not what's wrong with them, there's nothing wrong with them, it's what happened to them, and how they have tried to survive what happened.*

One subject referred to engagement as:

> *Forming a place of true deep connection… connecting in a deep way…kids are making some deep, deep connections*, [Yoga Calm…] *the modality is about union, about connection.*

Another subject explained the importance of trauma education for the staff working with her and with the children. Having staff included in the therapy, clients can generalize what they learned during therapy to day-to-day life. Illustrated by this quote, she said:

> *It's important for their own health benefits but also for them to connect with the students. This way they know what the children know, they have the experience of building strong bodies, of feeling still and grounded so when a child reacts or resists, in a traumatic moment, they, the staff, have the*

> *experience the child has in working with the yoga principles and they can go there together. The intervention is generalized to all areas of the child's life, staff have a way to engage with the child, not to mention the benefit yoga is for the adult staff member, who may have vicarious trauma from working with these kids.*

While not all subjects spoke directly to the theme of engagement, with prompting from the researcher the remaining subjects spoke to engagement in these words:

> *It's an assumption in working with all clients but children specifically would not respond without a felt sense of a connection, a level of trust in the therapist.*

**Embodiment.** Subjects spoke to the theme of embodiment generally in explanations of how trauma affects the body, specifically with regard to how their interventions addressed this issue. One subject explained it as follows:

> *for children especially, trauma resides in their body, in their cells, it's as if the trauma, the drive to survive bathes their bodies in cortisol, in stress hormones and every cell in their bodies is coated with stress. Their bodies need to release the stress, not in the 'just relax and take a deep breath' kind of release, although I don't want to imply that simple yet powerful intervention is not important, I want to emphasize the need to allow, to direct or guide their bodies to physically release the stress hormones from their muscles, through Progressive Muscle Relaxation, through physical energy release like running or shaking….*

One subject identified several aspects of embodiment:

> *A lot of trauma is felt in the body and registered in the body...* [Yoga Calm is] *very, very body centered so I might not say 'How do you feel?' but it would be more like 'What do you feel in your body right now? Where are you feeling it? What color is it? What temperature is it?' that way they are able to (a) verbalize and then physically feel it and (b) I think it gets to an intervention quicker as well. In Yoga Calm we use the body movements, the exercise, the physical activities to help them express their emotions instead of using it verbally… they learn to relax the body, to calm the body, to use certain poses or pressure points to combat stomachaches, headaches. So you get them to have the sense of physical calm… To see if kids can feel it in their bodies it makes more sense than just naming the feeling…Feelings are a little abstract, I think, so abstract, but if they know they feel it in their fist - their body is so concrete - they flex their fist back and forth when they're angry, they know there's something they can do.*

Another subject spoke to how the embodiment of the intervention is addressed:

> *…we do that through the mind-body connection. The body… the breath, using the breath to guide into the present moment and then helping them have that tool to go inside. Then once they feel that in their body, see that it's not a head thing, so once you know it in the body and you start to practice, or practice how to get back to it, you can do it, but the fact that even if you don't practice it, the fact that you have it, is amazing.*

A Yoga Calm therapist addressed how she herself participates in embodiment along with her clients:

> *…we're guiding this, this dance we're doing with them, so you're moving with them, watching and guiding with them and so you become in this state of total presence, you're learning how to be housed in your own body and when you're in that place as a clinician, then you can see way more, you're reading their body because you're in your body… kids sensory systems are so alerted, (wound so tight) you need the breathing… some of the calming things…you're not meeting them where their body is at if you're not doing that. I think it* [somatic interventions] *also might reach more boys. But the interesting thing is that with this work it goes in the body to the place where trauma is, where it happened and moves and shakes it; it's fascinating… they are learning to be housed in their bodies again. Learning how to not have their body be constantly triggered, they're learning techniques to calm their own nervous system.*

In the following section one subject identified a number of different embodiment interventions she utilizes when working with traumatized children:

> *I do some progressive muscle relaxation with them, or I have them tap their bodies up and down their arms and legs to get grounded, make sure they are 'in' their body… one of my very first traumatized kids spent most of our time together underneath a big pile of pillows and blankets, cushions off my couch, whatever he could do to weigh himself down, to feel the weight of something embracing him, that wasn't hurting him, to feel his body again… so I have a number of weighted pillows, eye pillows, smaller wraps they can put on their arms, legs, the backs of their necks, on the top of their head, some are scented.*

> *Kids are so sensory; I have a little apothecary of bottles of different scents and cotton balls they can smell. The nose is the only organ whose nerves go directly to the hippocampus, our memory storage in the limbic part of our brain, so I use scents as a relaxation and stress reduction tool…kids respond to giving their natural container, their body, a chance to experience sensations that relieve them of the hurt or relive a new different experience with their body and senses. I have a kid who absolutely loves the smell of lavender; he goes straight to it, every time. His mom said he was having an uncontrollable temper tantrum (he'd been triggered by his dad, who was supposed to have an order for protection, showing up and talking to mom). Anyway mom had bought some lavender spa thing for herself and she tossed it at him, in order to continue talking to her estranged husband (her child's abuser), and the child calmed himself down. That's another point in all this how do we teach kids skills and interventions they can utilize themselves in their own environment because often they are safe and moving forward in my office and it doesn't, or can't get generalized to home. When you work with the body, they always have that available to them. So teaching them to ground their bodies by tapping or patting, to be mindful and breathe deep in the moment, to build strength in a Warrior or tree pose, all these things are in vivo interventions at their ready, with them always.*

Another subject described a somatic intervention she used to relieve a flashback:

> *I could feel first, then see he was about to move into a flashback, I'd seen it before, the halted play, the blinking eyes, the anxious breath, then his eyes get*

> *steady and his little body twitches slightly. I've tried to process or get him to tell me what is happening, what he's seeing, what is scary and he doesn't respond. What I typically do now is reach for these small weighted bean-bags, like miniature weighted blankets. I slowly place them in his field of vision or attempt to place one on his forearm or thigh, even just a hand, some part of his body so he feels a sense of grounding, of being in the present moment instead of gone, off, in his flashback memory. The placement seems to relax him, soothe him, reconnect him to the here and now.*

Subjects working in residential treatment and private practice often mentioned the use of expressive arts: drawing, drumming, painting and music as very helpful interventions. One subject working with very young children spoke to this:

> *By using drawing, music, painting or puppetry, the tools of childhood really, they can be so helpful in getting children to uncover the felt sense of their bodies again, asking a child what color is your hurt, and having them choose where the red of their anger is placed on their body, (I have a big stack of paper with just an outline of a body), or using colored construction paper, no scissors, to rip what their feeling of fear looks like, using poetry or free writing in a journal can be so cathartic and revealing to them and to me, sometimes its shared and sometimes its held with them, until they're ready.*

Another intervention used by therapists to practice embodiment was drumming. One subject stated:

> *I have a drum in my office and we will often use that to express or identify feelings, what does anger sound like, what does fear sound like, what would*

> *calm sound like, letting them go at the drum for several minutes being with those feelings. I did read some research but right now I can't tell you exactly how or why this happens but it is just a physical release for them, their bodies seem more regulated, they start to talk and process more after the drumming.*

The three themes, safety, engagement and embodiment were found in all subjects' transcripts. One subject encapsulated all themes in this statement:

> *I guess one big thing is the reclaiming of the body, the moving past their past, knowing they are able to have healthy, safe, trusting relationships and not be hurt because they feel strong in their bodies. With body work –somatic interventions-they can get back into their bodies, feel safe in there, they can connect to others again because they feel strong.*

All subjects mentioned the end goal or result of their interventions allowed traumatized children to feel strong, empowered again. One subject described the impact of somatic interventions with the following words:

> [During somatic interventions] *not only are they soothing that nervous system and understanding its interaction, the mind-body interaction, they're empowered by that…kids say the deepest things about their deep reframing of who they think they are. It's not something they're hearing from their therapist or their parent, they're hearing it from their own heart, they're hearing that they're not the monster, they're hearing it wasn't their fault, they're hearing that 'you are strong and you'll get through this'.*

Discussion of the findings will look further into the impact of somatic interventions with traumatized children, how the findings relate to current trauma literature, limitations of

this study, recommendations for future research and the contributions these findings have to social work.

## Discussion

With somatic interventions the 'legacy' of trauma (Emerson & Hopper, 2011) can be changed from that of 'helplessness' to that of renewed safety, embodiment and engagement. This study found there is hope for traumatized children when somatic interventions empower them to listen to their heart relax and calm, see their bodies strengthen and feel for themselves how to regulate their emotions.

### Summary of Findings.

As anticipated, the focus on safety was a theme that emerged as being essential to working with traumatized children (Herman, 1992). If safety is not emphasized traumatized children's symptoms could be exacerbated because feeling unsafe induces anxiety, re-experiencing and hyperarousal.

Findings from this study include the following interventions that helped create a sense of safety: 1. Practicing yoga principles 2. Using weighted pillows, bean-bags 3. Using wraps to ground the body 4. Helping define personal space and boundaries 5. Giving children sensory soothing skills such as lavender scent or relaxing music 6. Utilizing expressive arts opportunities.

Findings also show that building a therapeutic alliance, empathetically engaging with the traumatized child is essential. The subjects stated that building strong relationships with traumatized children based on trust and safety is a long, slow process. Some interventions for building engagement were: 1. Walking with them 2. Noticing them, acknowledging their coping skills 3. Allowing them to sit under the school desk, under couch cushions to have a sense of control 4. Working closely with their families or staff. 5. Using psychoeducation to explain the biology of the traumatized brain 6. Providing consistency and structure.

The findings indicate that somatic interventions are useful embodiment exercises. These interventions allow children to be aware of their own body and give them a felt sense of and/or a return to their body that may have been victimized or abused during the trauma. Being in their bodies in the present moment may alleviate the flashback memories of the past, giving them an empowering sense of their bodies as safe and strong in the present moment. Interventions used to embody traumatized children included: 1. Tapping or patting the body 2. Progressive Muscle Relaxation 3. Using weighted pillows, bean-bags, wraps 4. Shaking, running, dancing, drumming 5. Deep breathing 6. Sensory tools (lavender for smelling, weighted beanies for grounding, drums for beating) 7. Yoga

Another finding from this research is that teaching traumatized children useful interventions that build on their strengths allow them to feel empowered by their present experience rather than vulnerable to their past. They are able to rely on their own bodies to calm and relax, to release the trauma energy and control the symptoms. They recognize their ability and the tools they have learned to regulate their emotions. Somatic interventions helped them realize they can control their bodies and emotions, they can pace the interventions to their comfort level and this empowered them to continue using the interventions.

Overall, the findings show subjects believe the use of somatic interventions to be a highly effective and rewarding tool in working with traumatized children. A phrase that illustrates this comes from one subject who said:

> *they're hearing that 'you are strong and you'll get through this' and the words that are coming from, from their heart are astonishing. They look at me*

> *in shock like 'what was that?' and I say 'that was you, because you have your answers- and we're gonna help you guide that' and we do.*

All subjects were excited to continue using somatic interventions with traumatized children. The subjects showed optimism about what the future holds for somatic interventions. They also expressed curiosity in discovering new interventions such as Trauma Releasing Experiences (Berceli, 2014) and the Mind-Up Model (Hawn, 2011).

The therapists interviewed were excited to hear the results to *prove what I know in my practice.* All spoke to the need for continued research to build on the evidence for use of somatic interventions especially with children and trauma.

**Findings and Current Literature.**

The findings in this study are consistent with historical and current literature in regard to the need for building a sense of safety for traumatized children (Emerson & Hopper, 2011; Herman, 1992; Terr, 1991). Levine's (2007, 2010) use of grounding exercises to establish safety proved to be effective for the two participants who utilized them.

The theme of embodiment concurs with the current literature in neuroscience speaking to the biological nature of trauma, how the sensorimotor and emotional levels of the brain hold and process the trauma in more of a physiological manner (Fogel, 2009; Hansen, 2011; Levine, 2007, 2010; Ogden, Minton, & Pain, 2006; Perry, 2000, 2001, 2009; Rothschild, 2000; Siegel, 2006; Solomon & Heide, 2005; van der Kolk, 2005, 2007). This was explained by one subject as:

> *trauma resides in their body, in their cells, it's as if the trauma, the drive to survive bathes their bodies in cortisol, in stress hormones and every cell in their bodies is coated with stress*

Hansen (2011) points out how the understanding of bodily sensations helps improve emotional self-regulation; this concept could be found in one subject's description:

> *Feelings are a little abstract, I think, so abstract, but if they know they feel it in their fist, their body is so concrete, they flex their fist back and forth when they're angry, they know there's something they can do.*

Just as current evidence based practices (TF-CBT) in treating traumatized children has established the significance of a strong therapeutic alliance these findings concluded the same in the consistent theme of engagement. Although the somatic interventions practiced in these findings have not yet reached evidence-based practice status they have clearly met the criteria Sackett et.al (1996) lay out in their article describing evidence-based practices. These findings show somatic practitioners combine the use of clinical skills, theoretical knowledge and personal experience to create practice-based evidence. Each of the subjects in these findings spoke to the nature of the interventions they were using as coming from a practice-based paradigm and the need for further research to establish evidence-based practices in somatic interventions. This study contributes to furthering the research but with several limitations that need to be addressed in future research.

**Limitations**

While this study contributes to research on somatic interventions, limitations do exist. Due to the small sample size, this research cannot be generalized to a larger population until further research with a larger and more diverse sample can be conducted.

Another limitation is that only two subjects were certified in the five somatic interventions focused on in this study: 1. EMDR 2. Sensorimotor Psychotherapy 3. Somatic Experiencing 4. Tapping techniques 5. Yoga. Acquiring certification in an intervention

requires time, money and energy; the researcher assumes refusal to participate was not based on concerns over the effectiveness or support of the intervention. Lack of response from certified practitioners of these interventions can be speculated as due to generalized research request fatigue, busy lifestyles, disinterest or discontinuance of the intervention.

Another thing to mention in terms of limitations is that, with the exception of EMDR, none of the somatic interventions utilized by the subjects has met the standard of evidenced-based practice at this writing. Subjects addressed this in the final structured question of the interview related to what the future holds for somatic interventions.

**Future Research**

With that said, all subjects were anxious for continued research, specifically research that holds the standard for evidence-based practices. In the future, creating evidence based practice studies using somatic interventions is important. This could be done in a variety of ways.

Research studies using control groups could be conducted in juvenile residential treatment facilities providing one campus or wing of the facility with somatic interventions such as Yoga Calm or Somatic Experiencing and the other as a control group using standardized trauma assessments at baseline and follow-up, similar to the current trials of TF-CBT. Assessing cortisol levels before and after somatic interventions could be another area of building evidence for practice. Showing how somatic interventions help avoid or manage vicarious trauma for therapists would be another important area of future research.

**Contributions to Social Work.**

An important and unexpected finding in this study was the discovery that the use of somatic interventions with traumatized children also benefitted the well being of the somatic

therapist. Utilizing yoga, deep breathing, relaxation and grounding exercises while teaching these interventions to children was reported to bring a deep sense of connection with their own emotional, physical and mental health while working with this most vulnerable of populations. This could contribute significantly to less vicarious or secondary trauma for social workers treating trauma.

There is also a need for education in the social work field on the use of somatic interventions as an effective tool in working with traumatized children. Understanding that social work education is based on evidence-based practices may be why there is currently little or no teaching new social work students the benefits of somatic interventions. Clinical social worker education could begin to include the 'bottom-up' processing interventions for trauma as well as the 'top-down' interventions currently being taught.

The need for specifying and identifying somatic interventions as a significant element in working with traumatized children demonstrates the true aspects of bio-psycho-social work with clients. With a greater understanding of somatic interventions social workers are able to treat the cognitive, emotional and the somatic aspects of a client's needs, the whole person. Treating the whole person truly serves the social work principle of *service* (NASW, 2008).

The use of somatic interventions also contributes to the other principles of social work. The nature of somatic interventions is that these practices are available at all times, within the individual's own body, giving them a sense of self-determination and leading them closer to their *inherent dignity and worth*. These interventions are building on the client's strengths, literally and figuratively; somatic interventions are using the *importance of human relationships* with their own bodies as a 'vehicle to change' (NASW 2008).

## Conclusion

In conclusion, this research coincides with trauma researcher Bessel van der Kolk's (2005) three primary areas of treating trauma: establishing safety and competence, dealing with traumatic reenactments and integration and mastery of the body and mind. This study showed therapists' use of somatic interventions in their work with traumatized children builds safety, allow them to reclaim and strengthen their bodies using mind-body connections, engage in healthy relationships and resolve the effects of trauma.

Each of these interventions allows the traumatized child to be empowered by their own bodies, emotions and thoughts. This research showed the bottom-up processing of somatic interventions is particularly useful with the developing brains of children.

Finally, somatic interventions can loosen the legacy of trauma's grasp and foster children who feel safe, embodied and engaged. Somatic interventions can empower traumatized children to a new legacy.

**References**

Adverse Childhood Experiences Reported by Adults -- Five States 2009. (2010). (ACE) *Morbidity and Mortality Weekly Report , 59* (49), 1609-1613.

Anda, R., Felitti, V., Bremner, J., & et.al. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence fromneurobiology and epidemiology. *European Archives of Psychiatric Clinical Neuroscience , 256*, 174-186. doi.10.1007/s00406-005-0624-4

Beck, J. (2011). *Cognitive behavior therapy: Basics and beyond.* New York, NY: The Guilford Press

Berceli, D. (2014). http://www.bercelifoundation.org

Blaustein, M. & Kinniburgh, K. (2010). *Treating traumatic stress in children and adolescents: How to foster resilience through attachment, self-regulation, and competency.* New York, NY: The Guilford Press

Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology , 28*, 759-775.

California Evidence-based Clearinghouse for Child Welfare (CEBC) (2013). www.cebc4cw.org/

Church , D. (2010) The treatment of combat trauma in veterans using EFT (Emotional Freedom Techniques): A pilot protocol. Traumatology. 16: 55-65. doi:

10.1177/153476560934754

Church, D. Piña , O. Reategui , C. Brooks , A. J. (2012a) Single session reduction of the intensity of traumatic memories in abused adolescents: A randomized controlled trial. *Traumatology.* 18: 73-79. doi: 10.1177/1534765611426788

Church, D., Hawk, C., Brooks, A., Toukolehto, O., Wren, M., Dinter, I & Stein, P. (2013). Psychological trauma symptom improvement in veterans using emotional freedom techniques: A randomized controlled trial. *Journal of Nervous and Mental Diseases.* Vol. 201(2) Feb. pp.153-160, doi: 10.1097/NMD.0b0131827f6351

Cohen, J., Mannarino, A. & Deblinger, E. (2006). *Treating and traumatic grief in children and adolescents.* New York, NY: Guilford Press

Craig , G. (2009) *EFT for PTSD.* Santa Rosa, CA: Energy Psychology Press.

Curran, L. A. (2010). *Trauma Competency.* Eau Claire, WI: Pesi, LLC

Diepold, J.H., Jr., & Goldstein, D.M. (2008). Thought Field Therapy and QEEG changes in the treatment of trauma: A case study. *Traumatology Online First,* November 9, 2008.

Fogel, A. (2009). *Body sense: the science and practice of embodied self-awareness.* New York, NY: W.W. Norton & Company

Folkes, C. (2002). Thought Field Therapy and trauma recovery. *International Journal of Emergency Mental Health*, 4(2), 99-104.

Dimasio, A. (1999). *The feeling of what happens.* New York, NY: Harcourt, Brace

Emerson, D. & Hopper, E. (2011). *Overcoming trauma through yoga.* Berkeley, CA: North Atlantic Books:

Flint , G. A. Lammers , W. Mitnick , D. G. (2005) *Emotional Freedom Techniques: A safe treatment intervention for many trauma based issues*. In Garrick J Williams MB (Eds), *Trauma treatment techniques: Innovative trends* (p 125). New York: Routledge.

Friedman, M., Keane, T., & Resick, P. (Eds.). (2007). *Handbook of PTSD: Science and practice.* pp.19-36. New York, NY: Guilford Press

Gendlin, Eugene (1978). *Focusing.* New York, NY: Bantam Dell

Gillen, L. & Gillen, J. (2007). *Yoga calm for children.* Three Pebble Press LLC: Portland, OR

Hansen, L. (2011). Evaluating a sensorimotor intervention in children who have experienced complex trauma: A pilot study. *Honors Project 151*, 7-10.

Hawn, G. (2011). *Ten mindful minutes: giving our children and ourselves the social and emotional skills to reduce stress and anxiety for happier, healthier lives.* New York, NY: Perigee Books

Herman, J. (1992). *Trauma and Recovery.* New York, NY: Basic

Holland, D. (2004). Integrating mindfulness meditation and somatic awareness into a public educational setting. *Journal of Humanistic Psychology, 44*(4), 468-484

LeDoux, J. (1996). *The emotional brain*. New York: Simon & Schuster

Levine, P. (2007). *Trauma through a child's eyes: Awakening the ordinary miracle of healing-Infancy through adolescence.* Berkeley, CA: North Atlantic Books

Levine, P. (2010). *In an unspoken voice: How the body releases trauma and restores goodness.* Berkeley, CA: North Atlantic Books.

Lubit, R. M., Rovine, D., Defrancisci, L., & Eth, S. M. (2003). Impact of trauma on children. *Journal of Psychiatric Practice, 9* (2), 128-138.

MacLean, P. (1985). Brain evolution relating to family play and the separation call. *Archives of General Psychiatry, 42*, 405-417.

Malchiodi, C. A. (Ed.). (2008). *Creative interventions for traumatized children.* New York, NY: The Guilford Press.

Milgram, N., Toubian, Y., Klingman, A., Raviv, A., & Goldstein, I. (1988). Situational exposure to personal loss in children's acute and chronic stress reactions to a school bus disaster. *Journal of Traumatic Stress, 1* (3), 339-352.

National Child Traumatic Stress Network (NCTSN). www.nctsnet.org/resources/topics/facts-and-figures

National Association of Social Workers (NASW) (2008). *Code of Ethics.*

Ogden, P. & Minton, K. (2000). One method for processing traumatic memory.

*Traumatology* Volume VI, Issue 3, Article 3

Ogden, P., Minton, K. & Pain, C. (2006). *Trauma and the body. A sensorimotor approach to psychotherapy.* New York: W.W. Norton & Co.

Ogden, P., Pain, C., & Fisher, J. (2006). A sensorimotor approach to the treatment of trauma and dissociation. *Psychiatric Clinics of North America, 29*, 263-279

Perry, B. (2000). Traumatized children: How childhood trauma influences brain development. *Journal of the California Alliance for the Mentally Ill, 11* (1), 48-51.

Perry, B.D. (2001). *The neurodevelopmental impact of violence in childhood.* Chapter 18 In *Textbook of child and adolescent forensic psychiatry.* (Eds. D. Schetky and E.P. Benedek) pp. 221-238 Washington, D. C. American Psychiatric Press, Inc.,

Perry, B. D. (2009). Examining child maltreatment through a neurodevelopmental lens: Clinical applications of the Neurosequential Model of Therapeutics. *Journal of Trauma and Loss , 14*, 240-255. doi.org/10.1080.15325020903004350

Perry, B., Pollard, R., Blakely, T., Baker, W., & Vigilante, D. (1995). Childhood trauma, the neurobiology of adaptation, and "Use-dependent" development of the brain: How "states" become "traits". *Infant Mental Health Journal , 16* (4), 271-291.

Rothschild, B. (2000). *The body remembers: The psychophysiology of trauma and trauma treatment.* New York, NY: W.W. Norton & Company

Rowe , J. (2005) The effects of EFT on long-term psychological symptoms. *Counseling &*

*Clininical Psychology* J. 2: 104.

Sackett DL, Rosenberg MC, Gray JA, Haynes RB, Richardson WS (1996) Evidence based medicine: what it is and what it isn't. *British Medical Journal*; 312: 71-72.

Salloum, A., Garside, L., Irwin, C., Anderson, A., & Francois, A. (2009). Grief and trauma group therapy for children after hurricane Katrina. *Social Work with Groups, 32*, 64 70.doi:10.1080/01609510802290958

Serwacki, M.L.& Cook-Cottone, C. (2012). Yoga in the schools: a systematic review of the literature. *International Journal of Yoga Therapy.* 22, 101-207

Shapiro, F. & Maxfield, L. (2002). EMDR: Information processing in the treatment of trauma. *In Session: Journal of Clinical Psychology*, 58, 933-946.

Siegel, D. (2006). Forward: *Trauma and the body. A sensorimotor approach to psychotherapy.* (Eds.) Ogden, P., Minton, K. & Pain, C. New York, NY: W.W. Norton & Co.

Solomon, E., & Heide, K. (2005). The biology of trauma. *Journal of Interpersonal Violence, 20* (1), 51-60. doi.10.1177/0886260504268119

Stickgold, R. (2002). EMDR: A putative neurobiological mechanism of action. *Journal of Clinical Psychology*, 58, 61-75.

Stickgold, R. (2007). Of sleep, memories and trauma. *Nature Neuroscience, 10*(5), 540–542.

Stickgold, R. (2008) Sleep-Dependent Memory Processing and EMDR Action. *Journal of*

*EMDR Practice and Research*, Volume 2, Number 4

Stickgold, R. (2007). The body keeps score: memory and the evolving psychobiology of post traumatic stress. *Harvard Review of Psychiatry.* Vol. 1,(5), pp. 253-265

Terr, L. (1991). Childhood trauma: an outline and overview. *American Journal of Psychiatry* 148:1, January 1991. pp.10-19.

United States Dept. of Health and Human Services (USDHHS) (2012). Child Welfare Outcomes 2008-2011 Report to Congress located at: www.acf.hhs.gov/sites/defaults/files/cb/cwo08_11.pdf

van der Kolk , B. A. McFarlane , A. C. Weisaeth , L. (1996) *Traumatic stress: The effects of overwhelming experience on mind, body, and society.* New York: Guilford Press.

van der Kolk, B. (2005). Developmental trauma disorder: toward a rational diagnosis for children with complex trauma histories. *Psychiatric Annals.* May 2005; 35, 5 p. 401

van der Kolk, B. (2007) *Handbook of PTSD: Science and practice.* Chapter 2 History of trauma in psychiatry. Friedman, M., Keane, T., & Resick, P. (Eds.) Guilford Press: New York, NY

Weissbecker, I., Sephton, S., Martin, M., & Simpson, D. (2008). Psychological and physiological correlates of stress in children exposed to disaster: Current research and recommendations for intervention. *Children, Youth and Environments, 18* (1), 30-67. Retrieved 9/29/2011 from http://www.colorado.edu/journal/cye.

APPENDIX A

# CONSENT FORM
# UNIVERSITY OF ST. THOMAS

## Therapists' Perspective on Somatic Interventions with Childhood Trauma
[542866-1]

I am conducting a study about *therapists' perspective on somatic interventions in childhood trauma* I invite you to participate in this research. You were selected as a possible participant because *you have placed your contact information on a public website of providers of somatic interventions*. Please read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: *Principal investigator*: *Coral Popowitz, graduate social work student, St. Thomas University, St. Paul, MN. Research advisor Colin Hollidge, Ph.D.*

**Background Information:**

The purpose of this study is: *Somatic interventions are becoming more widely known and utilized as an additional resource for treatment of childhood trauma; especially for children who may not be able or aware (pre-verbal trauma) enough to speak directly to what happened. This research study will contribute to the understanding of treating childhood trauma with somatic interventions from the perspective of therapists who are utilizing the interventions in the field.*

**Procedures:**

If you agree to be in this study, I will ask you to do the following things: *Schedule a thirty-minute telephone recorded semi-structured interview of ten questions previously provided to you. I will not identify you in the study nor will I ask you to identify any client or breech any confidentiality. This is a nonprobability snowball sampling so I will ask you to consider contacting any colleague who may be interested in participating and provide my contact information to them.*

**Risks and Benefits of Being in the Study:**

*There are no risks to yourself or your clients in being in this study. There are also no direct benefits.*

**Confidentiality:**

The records of this study will be kept confidential. In any sort of report I publish, I will not include information that will make it possible to identify you in any way. The types of records I will create include *recordings and transcripts of the recordings. These will be stored on the principal investigator's personal password protected cell phone and laptop computer. Both recordings and transcripts of the recordings will be destroyed on completion of this research project. Only the principal investigator will have access to any of these materials throughout the study period.*

**Voluntary Nature of the Study:**

Your participation in this study is entirely voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of St. Thomas. If you decide to participate, you are free to withdraw at any time up to and until *May 1, 2014*. Should you decide to withdraw data collected about you *will not be used in this research.* You are also free to skip any questions I may ask.

**Contacts and Questions**

My name is *Coral Popowitz.* You may ask any questions you have now. If you have questions later, you may contact me at *218-851-0786. Additionally my advisor Colin Hollidge can be reached at 651-336-1506.* You may also contact the University of St. Thomas Institutional Review Board at 651-962-5341 with any questions or concerns.

**You will be given a copy of this form to keep for your records.**

**Statement of Consent:**

I have read the above information. My questions have been answered to my satisfaction. I consent to participate in the study. I am at least 18 years of age.

_____ _____

**Signature and code of Study Participant** **Date**

_____

**Print Name of Study Participant**

Coral Popowitz, MSW student March 1, 2014

**Signature of Researcher** **Date**

APPENDIX B

Informed Consent Questions prior to interview:

1. Could you explain the purpose and process of the research I am conducting?
2. Could you please describe the process of informed consent and state your willingness to provide informed consent to participate?
3. How would you describe the risks or benefits involved in your participation?
4. Would you describe any confidentiality concerns for you or your clients with this study?

Demographics:

5. What professional degree or licensure do you hold
6. How long have you been practicing?
7. In what therapeutic setting are you currently practicing?
8. How do you decide when a client is suffering from trauma?
9. How many traumatized children and adolescents have you treated?

Intervention/techniques utilized

10. What somatic interventions are you currently using to treat traumatized children and adolescents?
11. How is it helpful?
12. What other somatic interventions are you considering implementing?
13. What led you to begin using somatic interventions with traumatized children and adolescents?
14. What do you think the future holds for somatic interventions with childhood trauma?